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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,760	11/29/2000	Allen R. Davis	CC-0308	4311

7590

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EXAMINER

WANG, GEORGE Y

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 09/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/740,760

**Applicant(s)**

DAVIS ET AL.

**Examiner**

George Y. Wang

**Art Unit**

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogle et al. (U.S. Patent No. 6,233,374, from hereinafter "Ogle") in view of Layton et al. (U.S. Patent No. 5,363,342, from hereinafter "Layton").

Ogle discloses an apparatus for non-intrusively sensing flow within a pipe (fig. 1, ref. 10) using acoustic and local pressure variation sensing arrays (fig. 1, ref. 5) having a plurality of sensors (fig. 1, ref. 14) each having coiled optical fiber (fig. 1, ref. 13) wrapped a plurality of turns circumferentially around the pipe. Ogle further discloses optical power from a source connected to the apparatus producing signals sent to the sensing arrays. The acoustic sensing arrays have Bragg gratings (fig. 1, ref. 18) and are spaced (fig. 1, ref. 11, 14) to sense acoustic signals for determining the speed of sound for fluid within the pipe. The local pressure variation sensors have evenly spaced apart with known distances (fig. 1, ref. 12) and are capable of sensing signals relating to local pressure variations to determine a velocity for fluid within the pipe (col. 1, lines 5-11). Ogle also teaches a pipe that is sufficiently compliant to sense acoustic and local pressure variation signals through the wall of the pipe (col. 1, lines 5-11).

However, the Ogle reference fails to specifically disclose a housing, which encloses the sensing arrays and forms a pressure vessel having an annular region between housing and pipe.

Layton discloses a housing, which encloses the sensing arrays and forms a pressure vessel having an annular region between housing and pipe (fig. 3, ref. 34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated a housing, which encloses the sensing arrays

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and forms a pressure vessel having an annular region between housing and pipe since one would be motivated to not only protect the sensor coils around the pipe, but to also increase the framework for which the sensors operate (col. 4, lines 33-45).

Furthermore, a housing support forms an air gap (fig. 46b) around the pipe, such that the scale factor of acoustic sensitivity would increase (col. 6, lines 51-60) and provide greater compliance to detect acoustic and pressure variations and impedance mismatches (col. 5, lines 6-17).


### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 703-305-7242. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gw  
August 30, 2002

  
ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2000